

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl.No.: 10/632,322
Appellant: Oizumi et al
Filed: 08/01/2003
TC/AU: 2624
Examiner: Rosario

Confirmation No.: 5221

Docket: TI-35909
Cust.No.: 23494

APPEAL BRIEF

Commissioner for Patents
P.O.Box 1450
Alexandria VA 22313-1450

Sir:

The attached sheets contain the Rule 41.37 items of appellant's Appeal Brief pursuant to the Notice of Appeal filed 08/21/2007. The Director is hereby authorized to charge the fee for filing a brief in support of the appeal plus any other necessary fees to the deposit account of Texas Instruments Incorporated, account No. 20-0668.

Respectfully submitted,

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Rule 41.37(c)(1)(i) Real party of interest

Texas Instruments Incorporated owns the application.

Rule 41.37(c)(1)(ii) Related appeals and interferences

There are no related dispositive appeals or interferences.

Rule 41.37(c)(1)(iii) Status of claims

Pursuant to MPEP 1205.02, for each claim in the case appellant states the status as follows:

Claim 1: rejected

Claim 2: rejected

Claim 3: rejected

Claim 4: rejected

Claim 5: rejected

Pursuant to MPEP 1205.02, appellant identifies each claim on appeal as follows

Claim 1: on appeal

Claim 2: on appeal

Claim 3: on appeal

Claim 4: on appeal

Claim 5: on appeal

Rule 41.37(c)(1)(iv) Status of amendments

There is no amendment after final rejection.

Rule 41.37(c)(1)(v) Summary of claimed subject matter

The independent claims on appeal consist of method claim 1.

The subject matter of claim 1 is a method of image filtering, comprising the steps of:

(a) computing a modified auto-correlation in a first direction for each pixel in an image (application page 8, lines 27-28; FIG.1a, top box);

(b) filtering said image with a lowpass filter (application page 9, lines 6-7; FIG.1a, within second box); and

(c) interpolating said image and said filtered image from step (b) wherein said interpolating at said each pixel depends upon said modified auto-correlation in a first direction (application page 9, lines 7-8; FIG.1a, within second box).

Rule 41.37(c)(1)(vi) Grounds of rejection to be reviewed on appeal

The grounds of rejection to be reviewed on appeal are:

1. Claims 1-5 were rejected under USC §112, ¶1 as failing to comply with the written description requirement.

2. Claims 1-2 were rejected under 35 USC § 102(e) as being anticipated by Belykh et al. (USP 7,050,618).

3. Claims 3 and 5 were rejected under 35 USC § 103(a) as being unpatentable over Belykh et al. (USP 7,050,618) in view of Edgar (USP 6,442,301).

Rule 41.37(c)(1)(vii) Arguments

1. Claims 1-5 were rejected as failing to comply with the written description requirement; the Examiner cited a lack of support for "filtering" in step (b) of claim 1 prior to "interpolating" in step (c) of claim 1.

Claims 1-5: Application page 9, lines 6-8 provide:

More explicitly, start with the simple low pass filter $x(n) \rightarrow y(n) = [x(n-1) + 2x(n) + x(n+1)] / 4$ and then define the overall filtering to be $x(n) \rightarrow (1-i)x(n) + (i)y(n)$ where the intensity $i = 5 (\quad_{th}) / 4$.

Thus there are two computations: first, $[x(n-1) + 2x(n) + x(n+1)] / 4$ which is the lowpass filtering of step (b) of claim 1. Second, $(1-i)x(n) + (i)y(n)$ which is the interpolating of step (c) of claim 1; in fact, this is linear interpolating of $x(n)$ and $y(n)$ with interpolation weights $(1-i)$ and (i) . Consequently, for one of ordinary skill in the art application page 9, lines 6-8 support steps (b)-(c) of base claim 1.

2. Claims 1-2 were rejected as anticipated by Belykh.

Claims 1-2: The Examiner gave the interpolating in step (c) of claim 1 no patentable weight due to an asserted lack of support in the specification.

However, application page 9, line 8 illustrates linear interpolating; namely,

$$(1-i)x(n) + (i)y(n),$$

and Belykh has no suggestion of the required interpolating of base claim 1.

Consequently, base claim 1 and its dependent claim 2 are patentable over the reference.

3. Claims 3 and 5 were rejected as unpatentable over Belykh in view of Edgar.

Claims 3 and 5: Appellant relies upon the patentability of base claim 1.

Rule 41.37(c)(1)(viii) Claims appendix

Claim 1 A method of image filtering, comprising:

(a) computing a modified auto-correlation in a first direction for each pixel in an image;

(b) filtering said image with a lowpass filter; and

(c) interpolating said image and said filtered image from step (b) wherein said interpolating at said each pixel depends upon said modified auto-correlation in a first direction.

Claim 2 The method of claim 1, further comprising:

(a) after steps (a)-(c) of claim 1 repeating steps (a)-(c) of claim 1 with said first direction replaced by a second direction, said second direction perpendicular to said first direction; and with said image of step (c) replaced by said interpolated image using said modified auto-correlation in a first direction.

Claim 3 The method of claim 1, wherein:

(a) said modified auto-correlation of step (a) of claim 1 is $R_{xx}(1)/(R_{xx}(0) + \delta)$ where $R_{xx}(\cdot)$ is the auto-correlation function for the pixel values in an interval about said each pixel and with the DC component removed, and where δ is a parameter.

Claim 4 The method of claim 3, wherein:

(a) said interpolating of step (c) of claim 1 depends upon the amount $R_{xx}(1)/(R_{xx}(0) + \delta)$ of claim 3 exceeds a threshold.

Claim 5 The method of claim 1, wherein:

(a) said image is a color channel of a color image.

Rule 41.37(c)(1)(ix) Evidence appendix

none

Rule 41.37(c)(1)(x) Related proceedings appendix

none